WHAT IS CLAIMED IS:

1. A method of graft polymerization comprising the steps of:

forming a polymerization initiating layer in which a polymer having, on a side chain thereof, a crosslinking group and a functional group having polymerization initiating capability is immobilized on a support by a crosslinking reaction; and

contacting a compound having a polymerizable functional group with the polymerization initiating layer, and then bonding the compound to the polymerization initiating layer by supplying energy thereto.

2. The method of graft polymerization of claim 1, wherein the polymer has on the side chain thereof a structure having a polymerization initiating capability selected from the group consisting of (a) aromatic ketones, (b) onium salt compounds, (c) organic peroxides, (d) thio compounds, (e) hexaaryl biimidazole compounds, (f) ketoxime ester compounds, (g) borate compounds, (h) azinium compounds, (i) active ester compounds, (j) compounds containing a carbon-halogen linkage, and (k) pyridinium compounds.

3. The method of graft polymerization of claim 1, wherein the crosslinking group is a group selected from a carboxylic acid group, a hydroxyl group, an amino group and an isocyanate group.

4. The method of graft polymerization of claim 1, wherein the

immobilization of the polymer by the crosslinking reaction is carried out using a crosslinking agent.

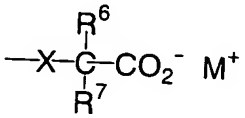
5. The method of graft polymerization of claim 1, wherein the compound having a polymerizable functional group is selected from hydrophilic monomers, hydrophilic macromers and hydrophilic polymers.

6. The method of graft polymerization of claim 1, wherein the compound having a polymerizable functional group is a polymerizable compound having a functional group whose hydrophilicity/ hydrophobicity is changed by heat, acid or radiation.

7. The method of graft polymerization of claim 6, wherein the functional group whose hydrophilicity/ hydrophobicity is changed is at least one selected from the group consisting of secondary alkylsulfonic acid esters, tertiary carboxylic acid esters, and alkoxyalkyl esters.

8. The method of graft polymerization of claim 6, wherein the functional group whose hydrophilicity/ hydrophobicity is changed is a group represented by the following general formula (L):

General formula (L)



wherein in general formula (L), X represents -O-, -S-, -Se-, -NR^8-, -CO-, -SO-,

$-SO_2-$, -PO-, $-SiR^8R^9-$ or -CS-; R^6, R^7, R^8 and R^9 each independently represents a mono-valent group; and M indicates an ion having a positive charge.

9. A hydrophilic member comprising:

a support;

a polymerization initiating layer formed on the support by immobilizing a polymer having, on a side chain thereof, a crosslinking group and a functional group having polymerization initiating capability, by a crosslinking reaction; and

a hydrophilic layer formed by bonding a hydrophilic compound having a polymerizable group, directly to the polymerization initiating layer.

10. A printing plate precursor comprising:

a substrate including a support and a hydrophilic surface; and

an image forming layer provided on the substrate,

wherein the hydrophilic surface is formed by directly bonding a hydrophilic compound having a polymerizable group to a polymerization initiating layer formed on the support by immobilizing a polymer having, on a side chain thereof, a crosslinking group and a functional group having polymerization initiating capability, by a crosslinking reaction.

11. The printing plate precursor of claim 10, wherein the image-forming layer is a positive image-forming layer whose solubility in an alkaline aqueous solution is increased by exposure to light.

12. The printing plate precursor of claim 11, wherein the positive image-forming layer comprises naphthoquinone diazide and novolac resin.

13. The printing plate precursor of claim 11, wherein the positive image-forming layer comprises a substance which absorbs light to generate heat and a polymer compound that is insoluble in water but soluble in alkali, and a solubility of the of the positive image-forming layer in an alkaline aqueous solution is increased by exposure to light.

14. The printing plate precursor of claim 13, wherein the substance which absorbs light to generate heat is at least one substance selected from cyanine dyes, phthalocyanine dyes, oxonol dyes, squarylium dyes, pyrylium salts, thiopyrylium dyes and nickel thiolate complexes.

15. The printing plate precursor of claim 13, wherein the polymer compound that is insoluble in water but soluble in alkali contains on at least one of a main chain and a side chain an acidic group selected from a phenolic hydroxyl group, a sulfonamide group, a substituted sulfonamide-type acid group, a carboxylic acid group, a sulfonic acid group, and a phosphoric acid group.

16. The printing plate precursor of claim 10, wherein the image-forming layer is a negative image-forming layer whose solubility in an alkaline aqueous solution is decreased by exposure to light.

17. The printing plate precursor of claim 16, wherein the negative image-forming layer comprises an alkali-soluble polymer compound, an acid-generating agent, and an acid-crosslinking compound.

18. The printing plate precursor of claim 16, wherein the negative image-forming layer comprises a photo or thermal polymerization initiator, an unsaturated addition-polymerization compound, and an alkali-soluble polymer compound.

19. A pattern forming material comprising:

a support;

a polymerization initiating layer formed on the support by immobilizing a polymer having, on a side chain thereof, a crosslinking group and a functional group having polymerization initiating capability, by a crosslinking reaction; and

a pattern forming layer formed by contacting a polymerizable compound having a functional group whose hydrophilicity/hydrophobicity changes due to heat, acid, or radiation, with the polymerization initiating layer, and supplying energy thereto, so as to generate a graft polymer on a surface of the polymerization initiating layer by graft polymerization.

20. A pattern forming method comprising the steps of:

providing a polymerization initiating layer on a support by immobilizing a polymer having, on a side chain thereof, a crosslinking

group and a functional group having polymerization initiating capability, by a crosslinking reaction;

generating a graft polymer on a surface of the polymerization initiating layer by graft polymerization by contacting a polymerizable compound having a functional group whose hydrophilicity/hydrophobicity changes due to heat, acid or radiation, with the polymerization initiating layer, and supplying energy thereto; and

imagewise supplying heat, acid or radiation to the graft polymer to form a hydrophilic/hydrophobic pattern.

21. A method of producing a particle-adsorbed material, the method comprising the steps of:

providing a polymerization initiating layer on a surface of a support by immobilizing a polymer having, on a side chain thereof, a crosslinking group and a functional group having polymerization initiating capability, by a crosslinking reaction;

contacting a compound having a polymerizable functional group and a polar group with the polymerization initiating layer, and irradiating radiation thereto, so as to bond the compound to the surface of the polymerization initiating layer by graft polymerization; and

adsorbing particles which are able to mutually interact with the polar group.

22. A method of producing a metal particle-dispersed thin layer film, the method comprising the steps of:

providing a polymerization initiating layer on the surface of a support by immobilizing a polymer having, on a side chain thereof, a crosslinking group and a functional group having polymerization initiating capability, by a crosslinking reaction;

contacting a polymerizable compound having a polar group with the polymerization initiating layer, and irradiating radiation thereto, so as to make the compound graft-polymerize to the surface of the polymerization initiating layer to provide a graft polymer layer, and adding a metal salt to the graft polymer layer; and

reducing the metal salt.